



# ***Battery Metals for a Clean Energy Future***

July 7, 2022

[www.gigametals.com](http://www.gigametals.com)

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## **Forward looking statements**

*Certain statements in this Presentation are forward-looking statements, which reflect the expectations of management regarding the Turnagain Project. Forward-looking statements consist of statements that are not purely historical, including any statements regarding beliefs, plans, expectations or intentions regarding the future. Such statements include, but are not limited to, statements with respect to the future financial or operating performance of the Company and its mineral projects, the estimation of mineral resources and mineral prices, steps to be taken towards commercialization of the resource, the timing and amount of estimated future production and capital, operating and exploration expenditures, and the expectation that the risk level is lower than some other mining projects; that our project is similar in many ways and in some ways favourably comparable to other nickel projects; that battery companies will use much more nickel in future; that a price premium could accrue to a nickel mine that was genuinely carbon neutral; and that we can produce nickel with low net carbon emissions. Such statements are subject to risks and uncertainties that may cause actual results, performance or developments to differ materially from those contained in the statements. No assurance can be given that any of the events anticipated by the forward-looking statements will occur or, if they do occur, what benefits the Company will obtain from them. These forward-looking statements reflect management's current views and are based on certain expectations, estimates and assumptions which may prove to be incorrect, including the statements relating to future exploration and development of the Project and mineral resource and mineral reserve estimations relating to the Project. A number of risks and uncertainties could cause our actual results to differ materially from those expressed or implied by the forward-looking statements, including: (1) the mineral resource estimates relating to the Project could prove to be inaccurate for any reason whatsoever, (2) Giga is unable to finance the Project, (3) prices for nickel and cobalt or project costs could differ substantially and batteries may not in future depend on nickel (4) inferred and indicated resources may not materialize, (5) permits, environmental opposition, government regulation, cost overruns or any of many other factors may prevent the Company from commercializing the Turnagain Project, (6) additional but currently unforeseen work may be required to advance to the pre-feasibility stage, (7) risk may be higher than expected for a number of reasons, some foreseeable and others unforeseeable such as indigenous land claims, natural disaster, and many other possibilities; (8) despite our expectations that we are comparable to other nickel projects, on closer examination and upon project start-up we may find that our expected comparisons were not valid; and (9) even if the Project goes into production, there is no assurance that operations will be profitable or that we can reduce carbon emissions compared to other producers. These forward-looking statements are made as of the date of this Presentation and, except as required by applicable securities laws, the Company assumes no obligation to update these forward-looking statements, or to update the reasons why actual results differed from those projected in the forward-looking statements. Additional information about these and other assumptions, risks and uncertainties are set out in the "Risks and Uncertainties" section in the Company's most recent MD&A filed with Canadian security regulators.*

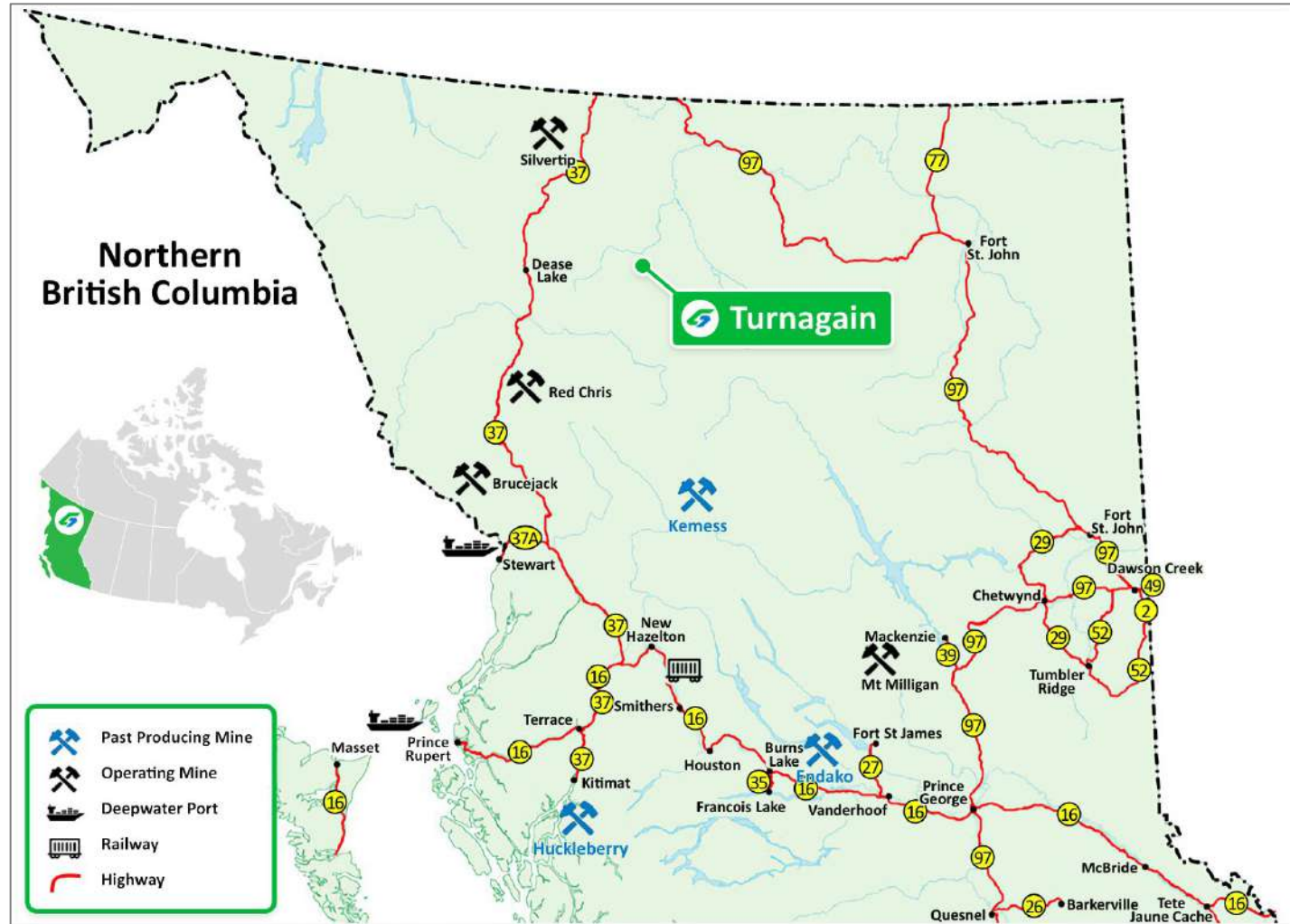
# About Giga Metals

- 📈 Giga Metals is a TSX.V & OTCQX listed junior mining company
- 🚗 World is in critical need of nickel to meet global battery demand
- ⚒️ Objective: build a 35+ year operation, averaging **33,000 t/y nickel**
- 🍁 Owns **100% of the Turnagain nickel and cobalt deposit**
- 🤝 Seeking strategic partners to advance the project
- 📄 Updated Preliminary Economic Assessment (PEA) models  
**37 year mine life**



# Located in an Attractive Mining Jurisdiction

- Strong ESG practices
- Access to a deep-water Pacific port and North American rail





# Project Highlights



## **SIMPLE FLOWSHEET**

Crush – grind – froth flotation

## **HIGH-GRADE CONCENTRATE**

Traditional processing or  
direct leaching

## **CARBON SEQUESTRATION**

Research shows pathway to  
carbon-neutrality

## **MEASURED & INDICATED**

2.36 Mt Ni (5B lb), 141 kt Co  
GRADE: 0.22% Ni, 0.013% Co

## **INFERRED**

2.48 Mt Ni (5B lb), 148 kt Co  
GRADE: 0.22% Ni, 0.013% Co

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Results per [Turnagain PEA \(effective date Oct 28, 2020\)](#).

# PEA Summary

## PRODUCTION HIGHLIGHTS

**33,000 t/y Ni**

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Average output LOM

**18% Ni, 1% Co**

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High-grade nickel sulphide concentrate

**< 2.5 t CO<sub>2</sub>e/t Ni**

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in concentrate, low carbon footprint

## ECONOMIC HIGHLIGHTS

**US \$1.4B**

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Phase 1 Capital Cost

**US \$0.5B**

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Phase 2 Capital Cost

**US\$2.81/lb. Ni**

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Net operating cost average, in concentrate at site gate

# Canadian Projects Comparison

Project	Turnagain	Dumont	Crawford	Baptiste
Study Status and Effective Date	PEA – Nov 2020	Feasibility – Jul 2019	PEA – May 2021	PEA – Sep 2020
Recovered Ni - LOM	0.11%	0.12%	0.09%	0.10%
Proposed Product Destination in Engineering Study	Sale to sulphide smelter (→ Class 1)	Sale to or tolling by nickel roaster (→ ferronickel)	Sale to nickel roaster (→ ferronickel)	Sale to stainless mills (or ferronickel plants)
Assumed Nickel Payability in Study	78%	91.5%	91%	98%
Site Initial Capex (\$000/t Ni LOM)	\$48	\$43	\$59	\$37
Site Sustaining Capex (\$000/t Ni LOM)	\$56	\$17	\$34	\$26
Strip Ratio (LOM)	0.2	1.0	2.1	0.4

- Data is extracted from the referenced engineering studies. C\$ costs from study converted to US\$ at \$0.77 for Dumont.
- All projects are of broadly similar process plant feed capacity (32 to 44 Mt/y) and life (26 to 37 years), with broadly similar deposits (outcropping ultramafic orebody). Significant differences include strip ratio, degree of alteration and resulting nickel mineralogy.
- Sustaining capital assumptions vary substantially, including for tailings structures due to different design considerations (upstream, center-line, in-pit), and for process plant equipment.
- Offsite infrastructure costs are not shown. The Turnagain project has higher offsite infrastructure costs.
- **PEAs are preliminary in nature and include inferred mineral resources that are too speculative geologically to have economic considerations applied to them that would enable them to be categorised as mineral reserves. There is no certainty that the preliminary economic assessment outcomes will be realized.**

# Plans & Catalysts

**2022**

- ◆ Update resource model
- ◆ Update metallurgical test work
- ◆ Conduct early optimization studies
- ◆ Acquire remaining geotechnical data
- ◆ PFS Engineering

***Goal: complete PFS by Q1 2023***

**2024**

- ◆ Feasibility Study
- ◆ Environmental Assessment



**2027-2028**

- ◆ Startup



**2028-2055**

- ◆ LOM Production average  
33,000 t/y Ni  
1,800 t/y Co





# 18% Ni Concentrate Product

- Multiple testwork campaigns: 15 to 21% Ni.<sup>1</sup>
- Low impurities such as arsenic, mercury, cadmium
- Suitable for PEA Base Case – smelting
- Suitable for direct pressure oxidation to produce refined nickel end products such as battery chemicals
  - Sherritt, BHP, Vale have built direct refining operations
- Project has **flexible options** for concentrate sale/treatment

Average of 5 Locked-Cycle Tests <sup>1</sup>	
Ni	19.7%
Co	1.2%
Cu	0.46%
Fe	32%
S	26%
Mg	4.4%
SiO <sub>2</sub>	6.4%
Pt+Pd	3 g/t

# Mixed Hydroxide Precipitate (MHP)

- MHP is a chemical form of nickel that is in extremely high demand from battery makers today
- Testwork has proven that Turnagain concentrate is suitable for processing to MHP
- Turnagain MHP quality is superior to currently available commercial MHP

Typical MHP Composition <sup>1</sup>		
Component	Unit	Value
Nickel	wt% (dry)	30 - 39
Cobalt	wt% (dry)	2 - 5
Zinc	wt% (dry)	1 - 4
Copper	wt% (dry)	1 - 4
Manganese	wt% (dry)	4 - 9
Magnesium	wt% (dry)	3 - 5
Iron	wt% (dry)	< 0.5
Aluminium	wt% (dry)	< 0.5
Sulphur	wt% (dry)	3 - 5
Moisture	wt%	35 - 45

Turnagain Lab Test MHP Grades <sup>2</sup>			
Ni+Co %	Mg %	Mn %	Cu+Fe %
49	1.4	0.2	<0.1

# Modern Tailings Management



**Efficient** valley location minimizes dam construction

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Dam construction by **centerline method**, constructed from inert quarried rock or mined waste hard rock

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Tailings to be sub-aerial (**dry beach**), allowing mineral carbonation

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**Low seismic risk**

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Relatively low precipitation (~0.6 m/y), **excellent water balance**

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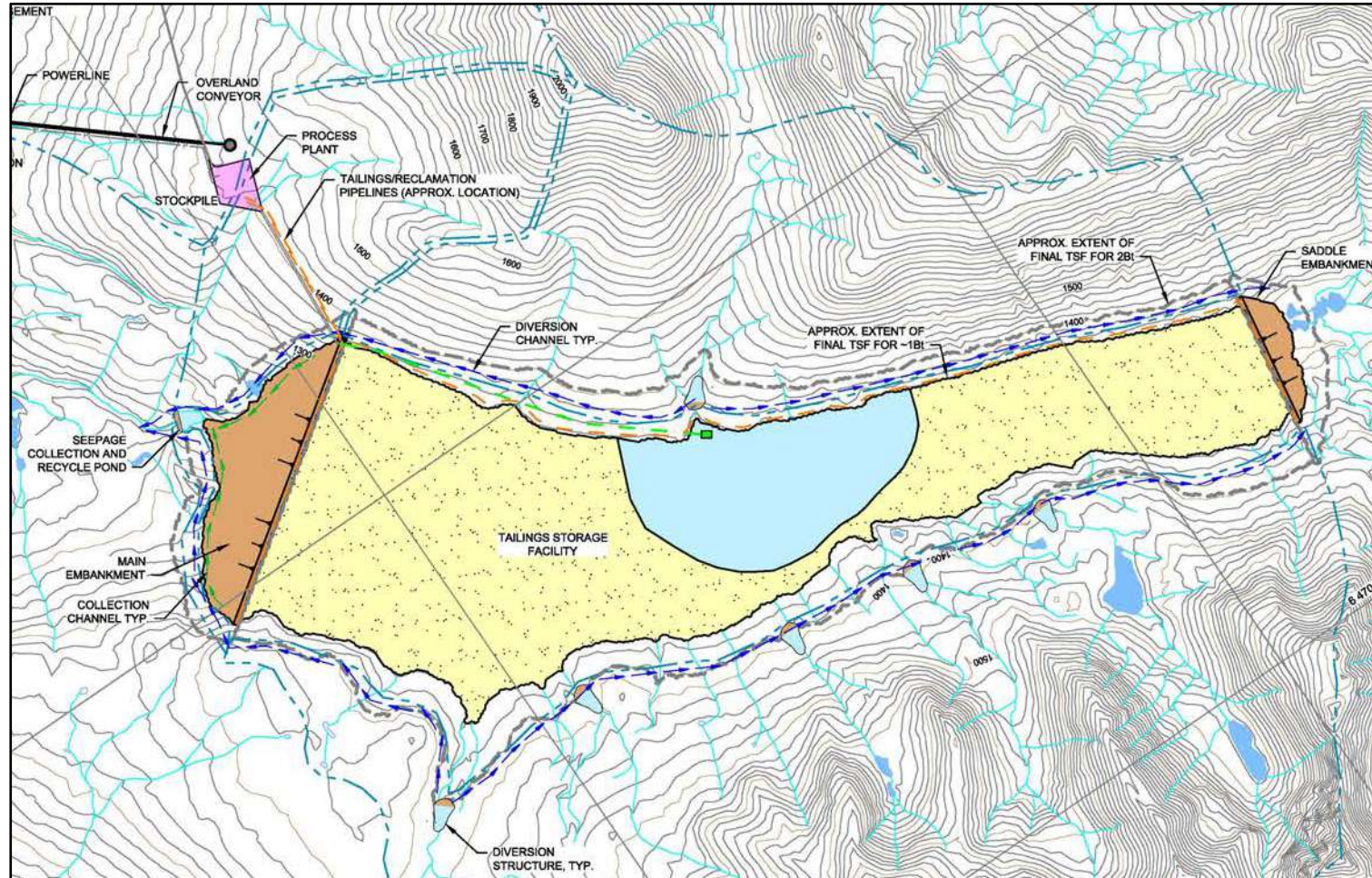
**CO<sub>2</sub> sequestration** in tailings through mineral carbonation

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# Turnagain Tailings Management Facility



Per [Turnagain PEA](#) (effective date Oct 28, 2020).

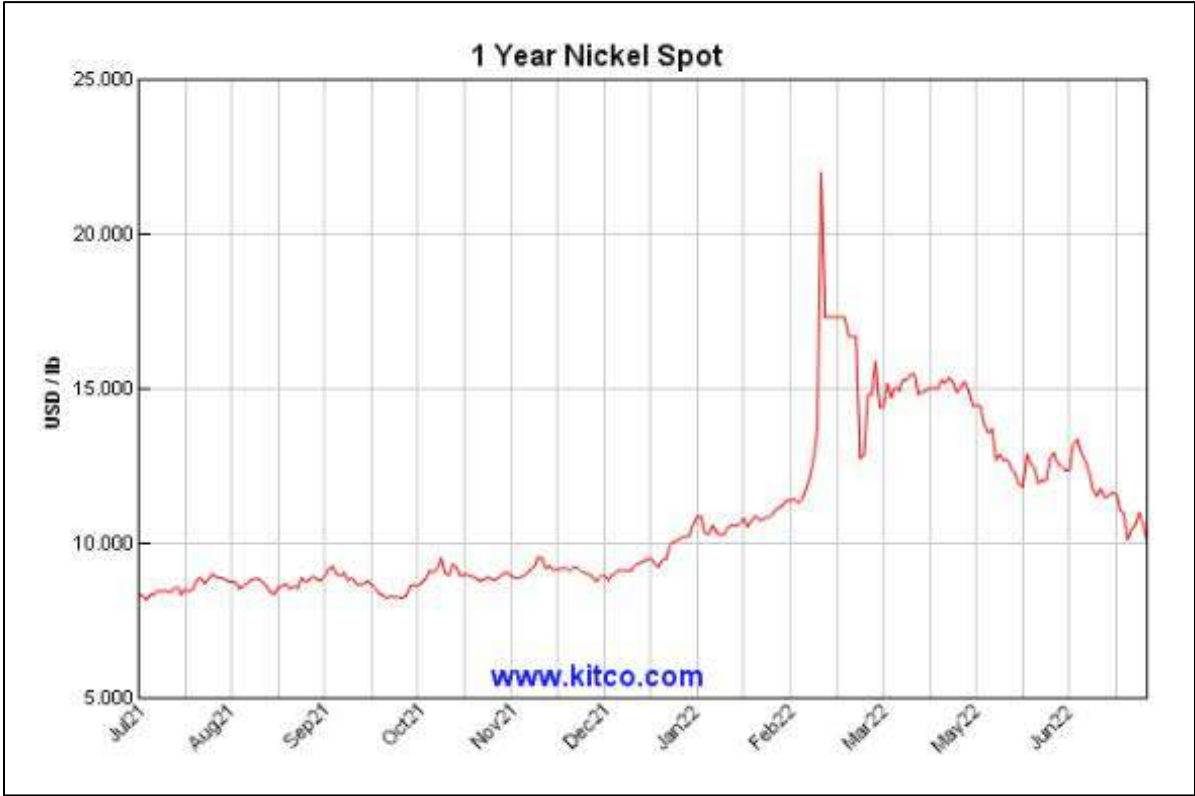


# Nickel Prices are Historically Volatile



- Orange line represents nominal dollars
- Black line represents current dollars inflated to 2021 using compounded inflation.

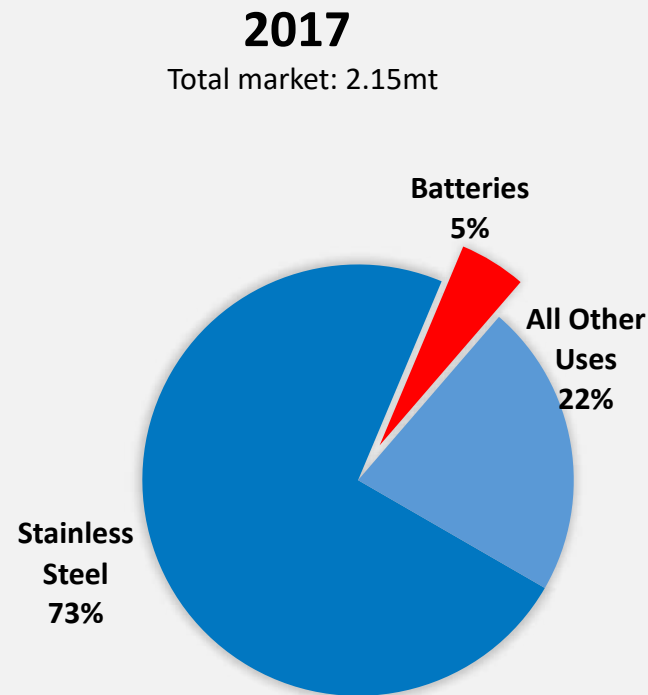
# Class One Nickel Market is Getting Tight



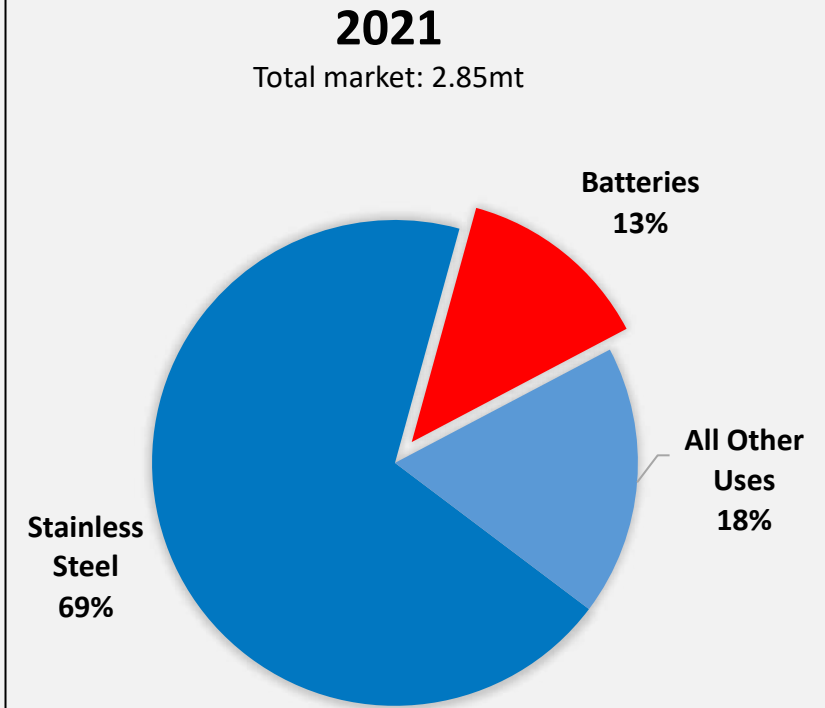
# Batteries Are Now Second Largest Use of Nickel

- Batteries consumed around 360kt of primary nickel in 2021, up from 200kt in 2020

## GLOBAL NICKEL CONSUMPTION BY FIRST USE



Source: Nornickel 2017 Annual Report



Source: INSG, ISSF, Macquarie Commodities Strategy, February 2022

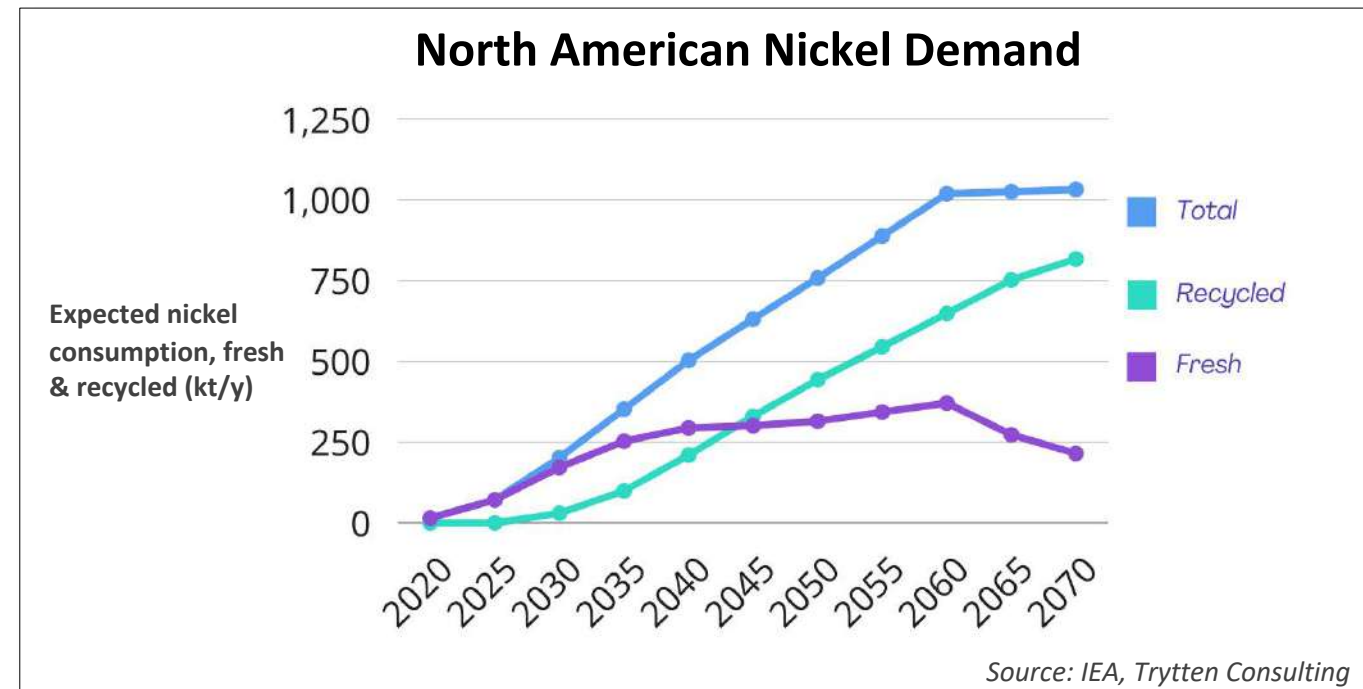
# Li-ion Batteries - the Fastest Growing Source of Worldwide Demand for Nickel

## 1.5 to 2.5 Mt/y<sup>1</sup>

of new battery-grade nickel could be required globally by 2040 for lithium-ion batteries alone.

## 40-70

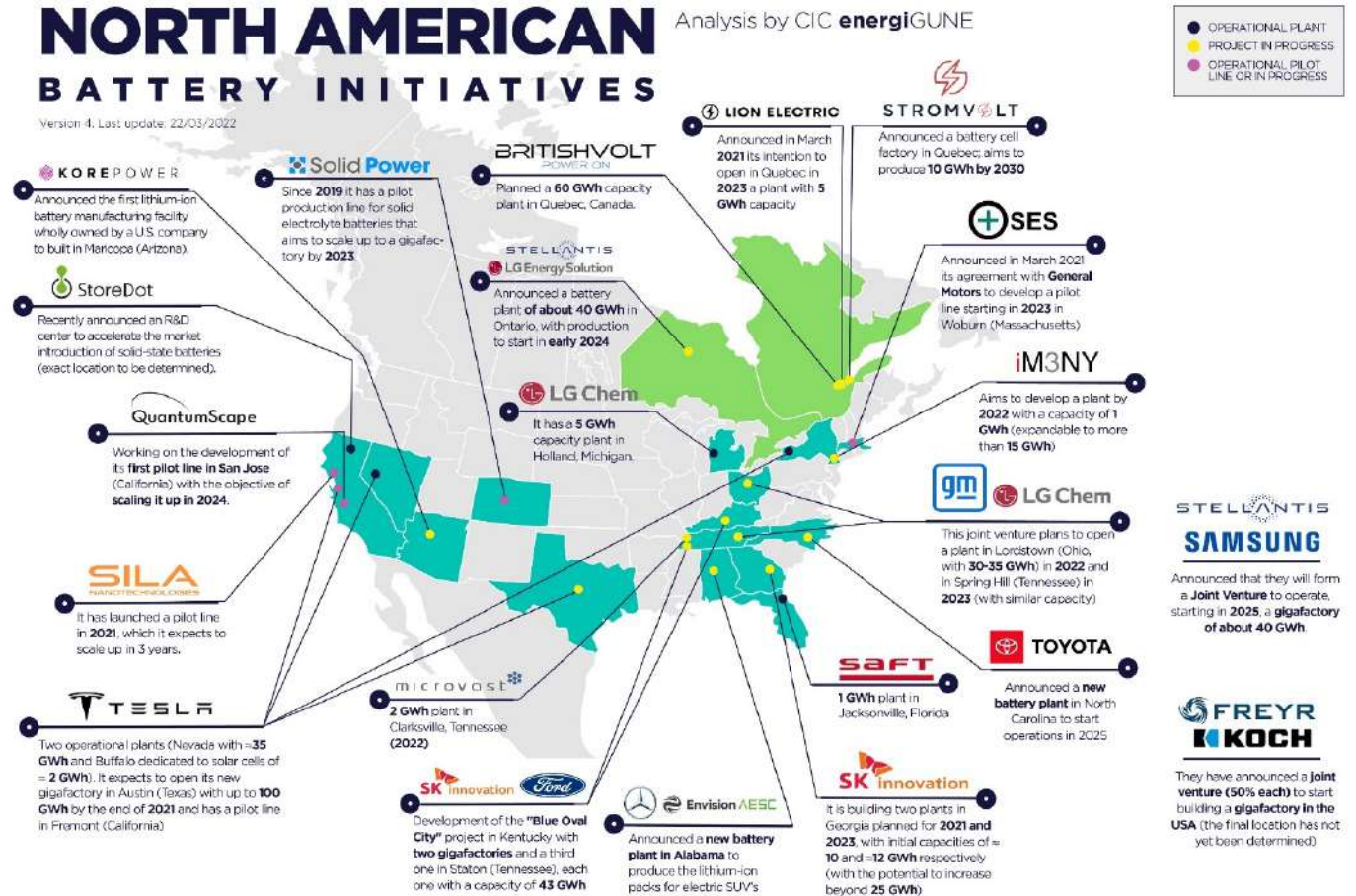
new large mines would be needed by 2040 to meet this demand.





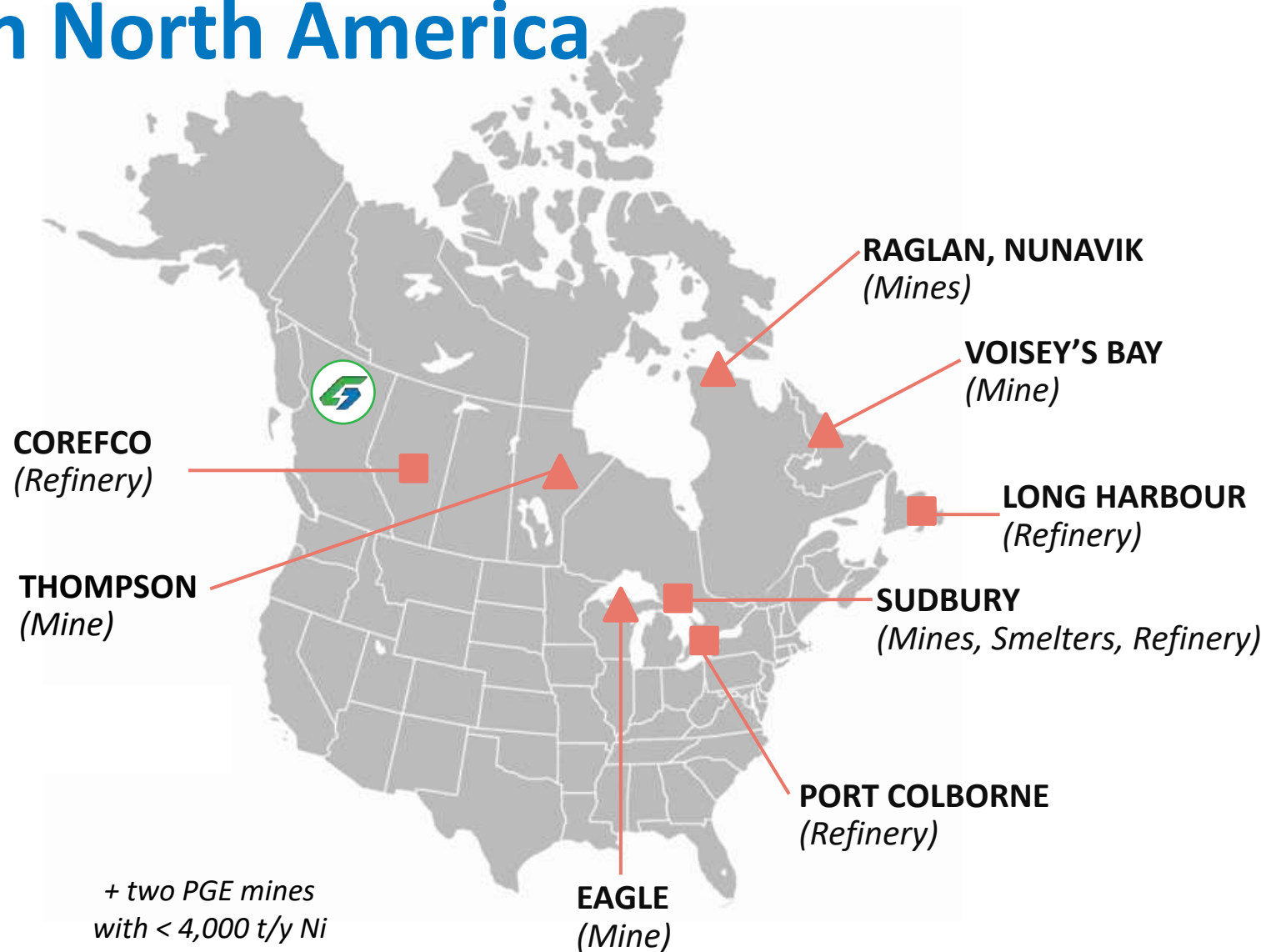
# Battery Projects in North America

- The supply chain for new giga factories is not yet resolved
- 250,000 to 450,000 t/y of new nickel supply is needed to feed announced battery projects in North America alone
- Actual demand depends on chemistry evolution and further project announcements



# Nickel Operations in North America

- Canada has nickel mines, smelters, and refineries.
- Most current global production is unsuitable for batteries.
- New mines and processing are needed to make the right materials for batteries.



# Nickel Projects in North America

- Turnagain is the largest potential project in North America targeting battery-grade nickel supply.
- To date, other large projects are based on supply to the stainless steel markets.

**GIGA METALS**  
33 kt/year  
Class 1, **Battery-Grade**

**FPX NICKEL**  
44 kt/year  
Class 2, **Stainless Steel**

**GRID METALS**  
4 kt/year

**POLYMET MINING**  
4 kt/year

**TALON METALS**  
13 kt/year

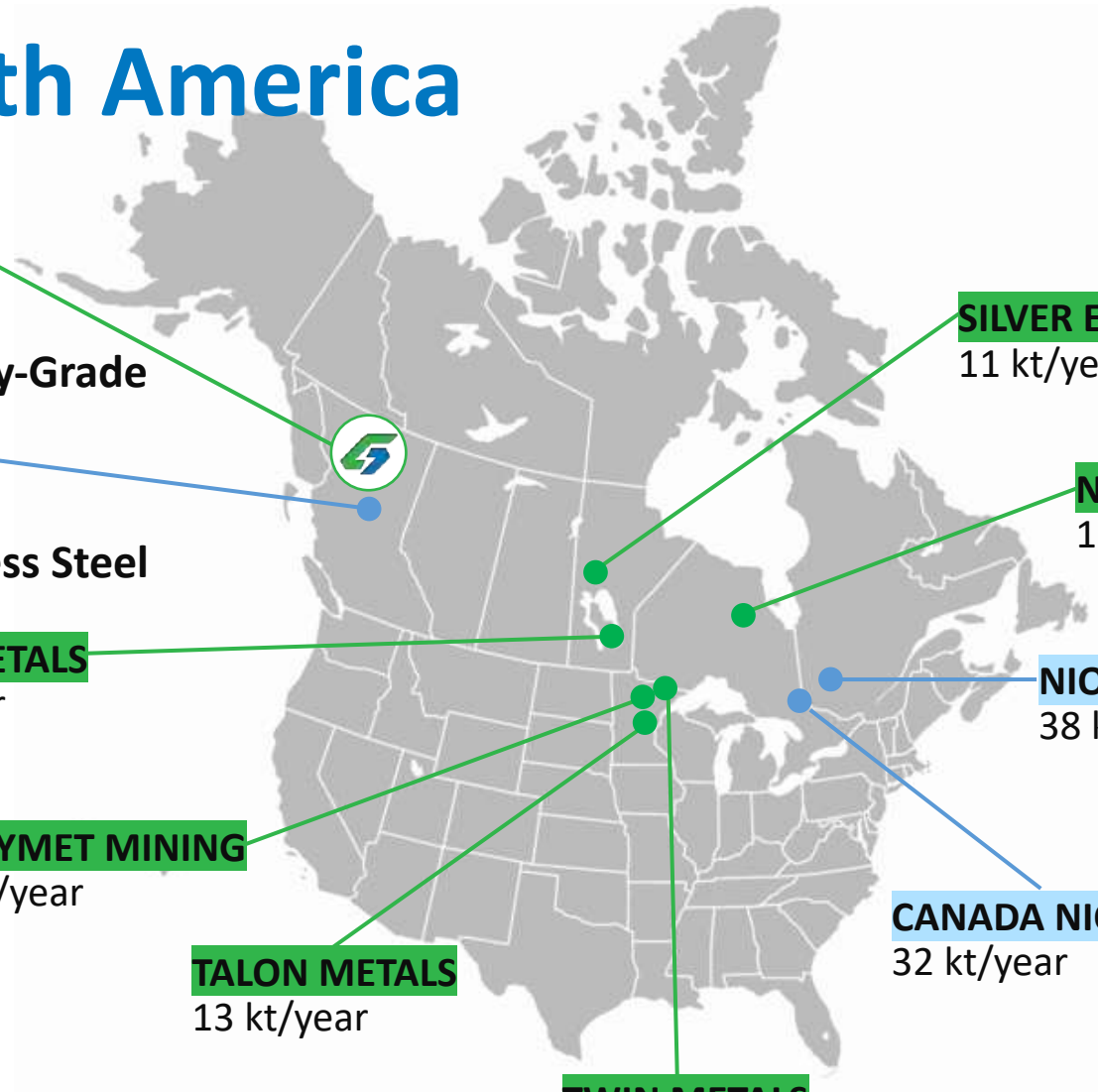
**TWIN METALS**  
17 kt/year

**SILVER ELEPHANT**  
11 kt/year

**NORONT**  
15 kt/year

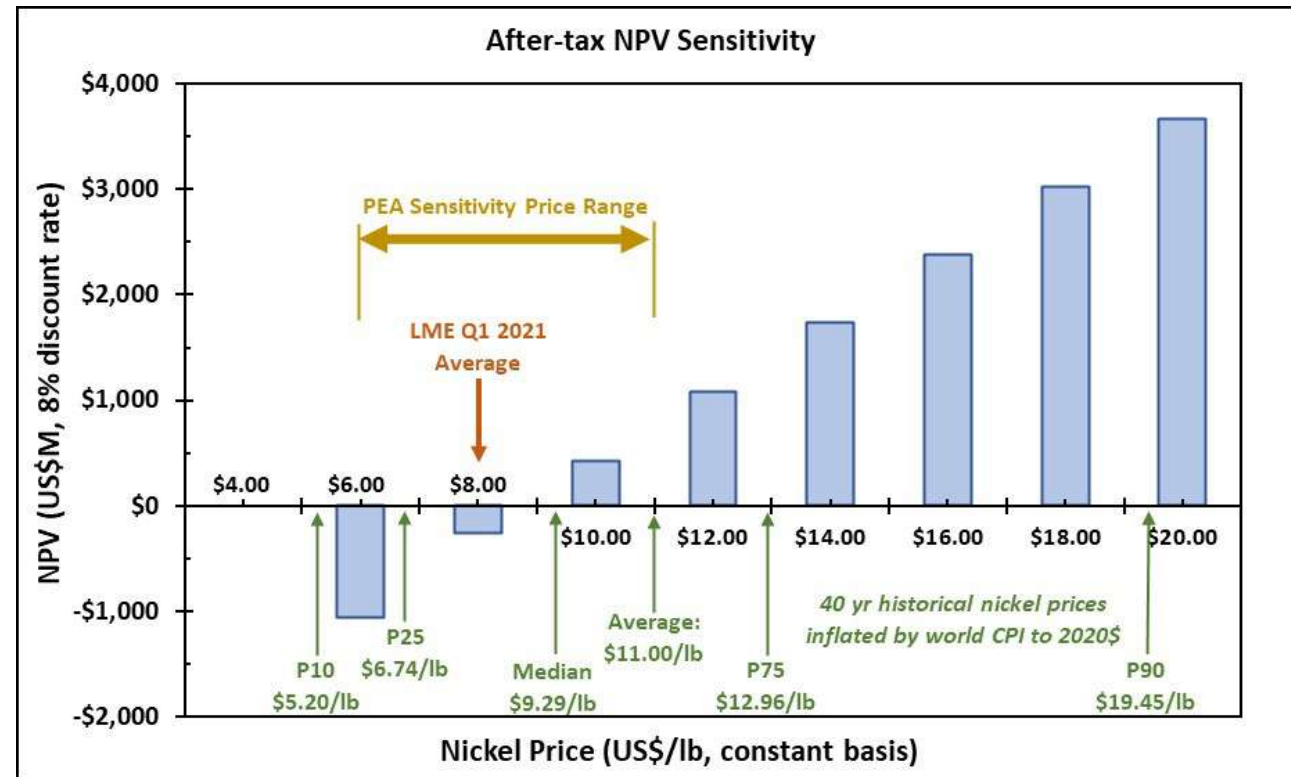
**NION (DUMONT)**  
38 kt/year

**CANADA NICKEL**  
32 kt/year



# Nickel Price Sensitivity Analysis

- PEA Base Case nickel price of \$7.50/pound
- Post-tax NPV of -\$443M
- Skewed nickel price distributions result in larger upside benefit than downside risk
- 10th, 25th, 50th, 75th, 90th percentile pricing reflected

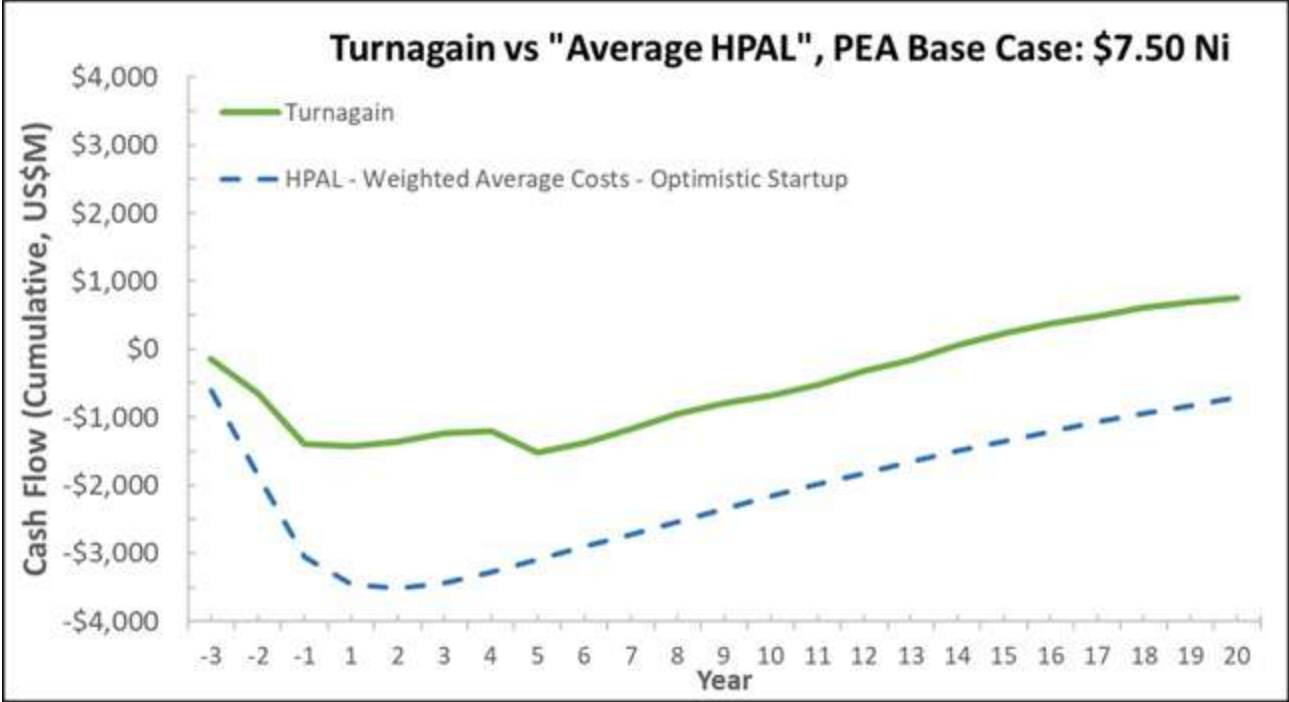




# Cumulative Cash Flow Comparison with HPAL

PEA Base Case nickel price of \$7.50/pound:

Turnagain project has a pre-tax IRR of 6.3% and an after-tax IRR of 4.9%.



The cash-flow is presented on a pre-tax basis. Turnagain data is derived from the [Turnagain PEA \(effective date Oct 28, 2020\)](#) which includes inferred mineral resources that are too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves; there is no certainty that the preliminary economic assessment will be realized. HPAL economics calculated by Giga Metals based on capital and operating cost for a basket of 5 projects from Wood Mackenzie (Australia and Philippines). Data reviewed by Giga Metals QP.



# Comparison with Laterite Projects

## TURNAGAIN

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- Open pit mine in hard rock
- Deep deposit minimizes mine deforestation
- Low erosion potential, pit water used/treated
- Northern location reduces biodiversity impacts



*Gibraltar Copper Mine, BC (Canadian Mining Journal)*

## PROSPECTIVE LATERITE

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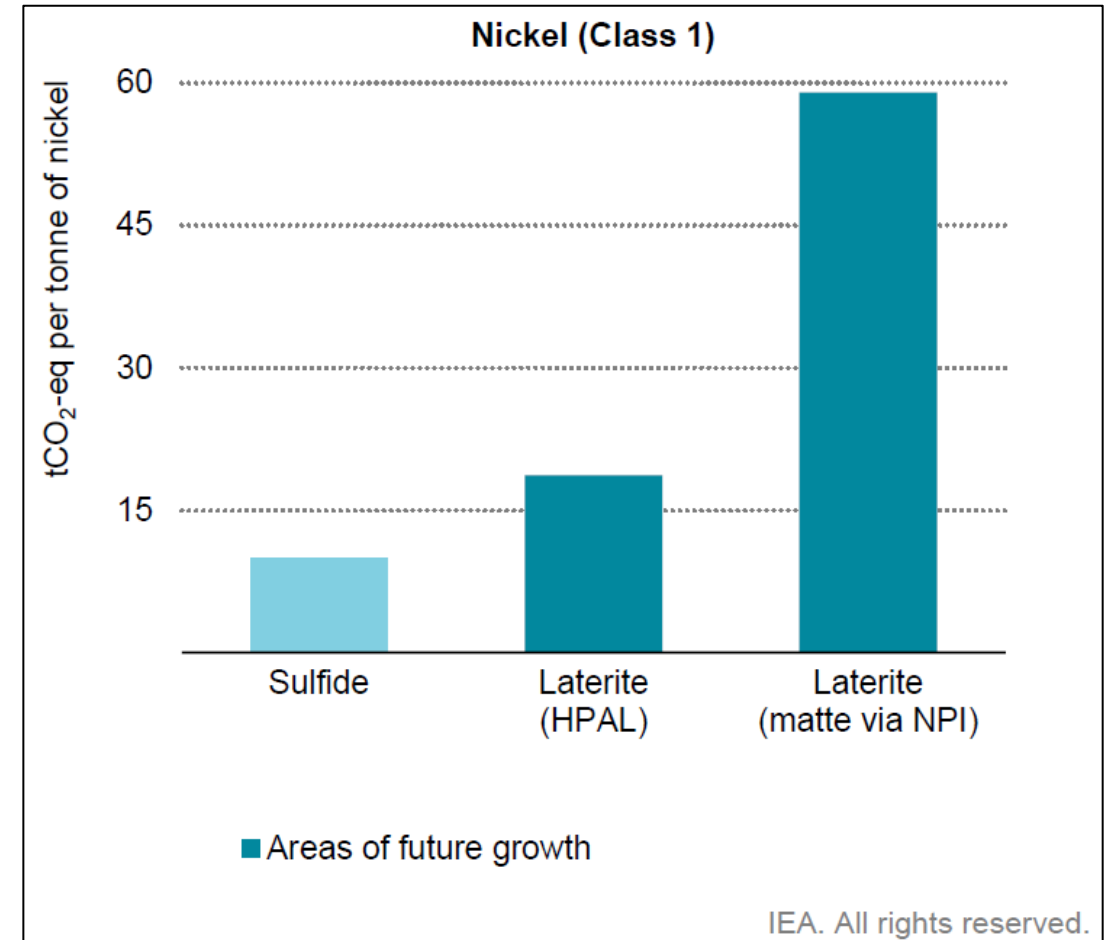
- Strip mining soft deposits
- Thin deposits increase mine deforestation
- High erosion potential, river/ocean contamination
- Tropical location increases biodiversity impacts



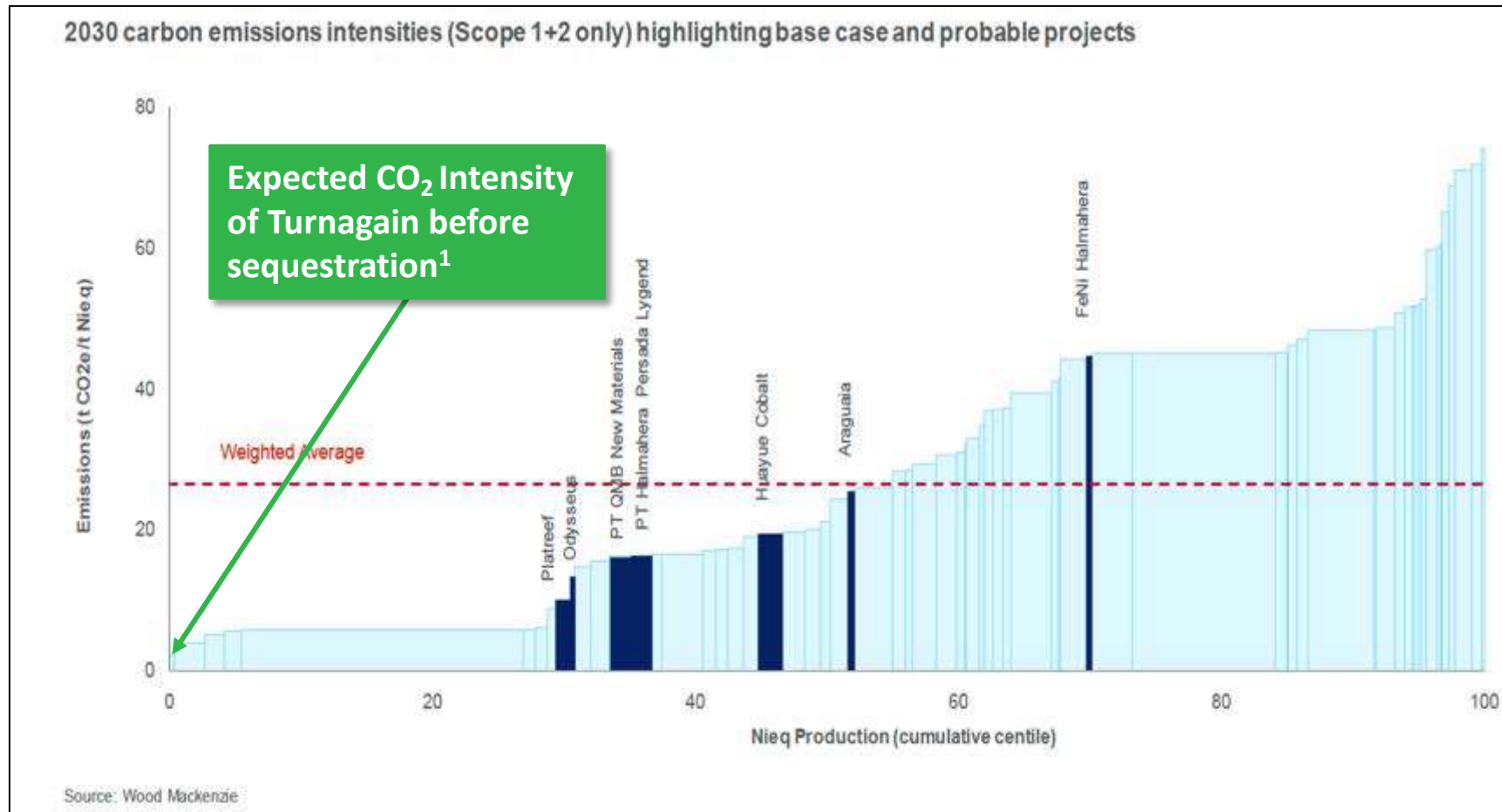
*Nickel Mine in Sulawesi (Chinadialogue.net, Ian Morse)*

# Carbon Intensity of Nickel Processing

- Sulphide projects have lower carbon intensities
  - Upgrading of ores to concentrates
  - Sulphur is a fuel for smelting
- Laterite processes treat entire orebody with chemical leaching or smelting
  - ➔ higher carbon intensity



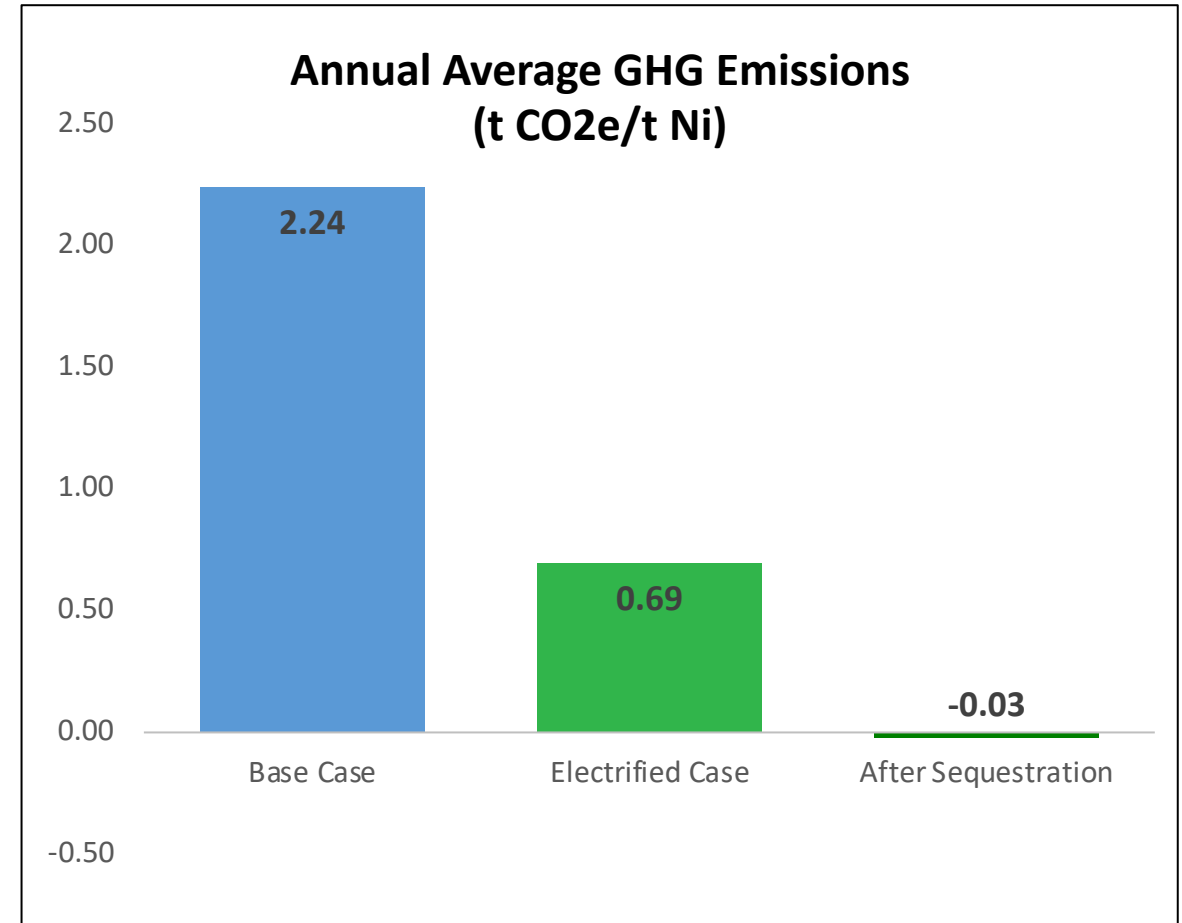
# Emission Intensity of Probable Nickel Projects





# Carbon Neutrality at Turnagain

- Turnagain tailings will sequester CO<sub>2</sub>
- Reaction with silicates creates carbonates, locking away CO<sub>2</sub> for millennia
- Testing by Dr. Greg Dipple (University of British Columbia) demonstrated stable reaction rates of 27 to 34 t/ha/y
- 900 kt of CO<sub>2</sub> could be sequestered over the mine life (0.72 tonnes CO<sub>2</sub> per tonne nickel produced) at the lower rates



# Board of Directors



**Mark Jarvis, CEO, Chairman of the Board**

Mr. Jarvis has more than 30 years of experience in exploration and development of mineral resources, both in oil & gas and metals. After a career financing exploration projects as a stockbroker, he moved to the corporate side of the business in 1996. He joined the board of Ultra Petroleum as Director and was responsible for Corporate Finance and at the time when Ultra had a large unconventional gas prospect that ultimately became 3 TCF of proved reserves.



**Martin Vydra, P.Eng., President & Director**

Mr. Vydra is a former executive with Sherritt International. Martin is widely recognized as an expert in nickel and cobalt extraction, processing and refining including the development and application of advanced technologies to maximize the recovery of valuable metals such as nickel and cobalt from a variety of feeds. While at Sherritt, his technical accomplishments spanned four continents and over 20 operations.



**Robert Morris, Director**

Mr. Morris is a former senior executive with Vale S.A., the largest nickel producer in the world, and most recently as Executive Vice President with global accountability for sales and marketing of Vale's base metals portfolio, including Nickel, Copper, Cobalt and Precious Metals. He was an officer of the company and member of the senior management committee. His knowledge of the rapidly evolving market for nickel and cobalt products is extensive and includes marketing battery materials to battery manufacturers.



**Lyle Davis, P.Eng. MBA, Director**

Mr. Davis is a director and CEO of Condor Resources Inc., a copper and gold exploration company active in Latin America. He previously worked in the corporate finance practices of Ernst & Young, and in a similar capacity at C.M. Oliver, a brokerage firm. Before that, Mr. Davis was with the Vancouver Stock Exchange. He is a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.



**Anthony Milewski, Director**

Mr. Milewski is the Chairman of Nickel 28. He spent his career in various aspects of the mining industry, including as a company director, advisor, founder and investor. In particular, he has been active in battery metals including investing in cobalt and actively trading physical cobalt. Anthony was a member of the London Metals Exchange Cobalt Committee and has previously worked at Pala Investments, Firebird Management, and Renaissance Capital.

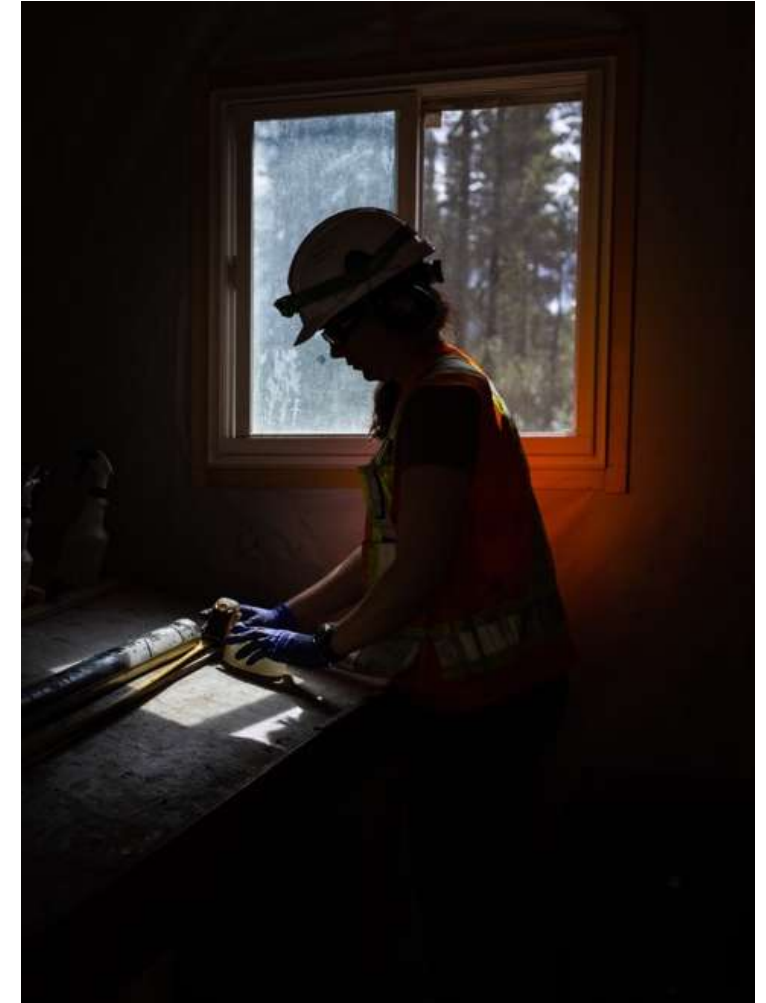
# Capital Structure

## Trading Symbols

TSX.V: GIGA | OTCQX: HNCKF | FSE: BRR2

## Capital Structure *(March 21, 2022)*

Shares Outstanding	97,854,128
Total Warrants	28,372,224
Free Trading Warrants <small>GIGA.WT, strike price \$0.60, exp. Apr. 23, 2024</small>	13,667,755
Free trading warrants <small>GIGA.WT.A, strike price \$0.45, exp. Feb. 8, 2025</small>	12,075,700
Options	9,515,000
Fully-diluted	135,741,352
Share Price <i>(July 7, 2022)</i>	C\$0.28
Market Capitalization	C\$27 M





# Why Invest In Giga Metals?

**Large deposit:** average of 33,000 t/y Ni for 37 years

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**High-grade concentrate** for standard processing or pressure oxidation

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**40-70 new Turnagain-scale projects needed** in next 20 years

***The EV revolution is dead in its tracks if we don't mine more nickel.***





**Where will all the nickel come from?**



# Let's Talk.

Visit us: [www.gigametals.com](http://www.gigametals.com)

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